

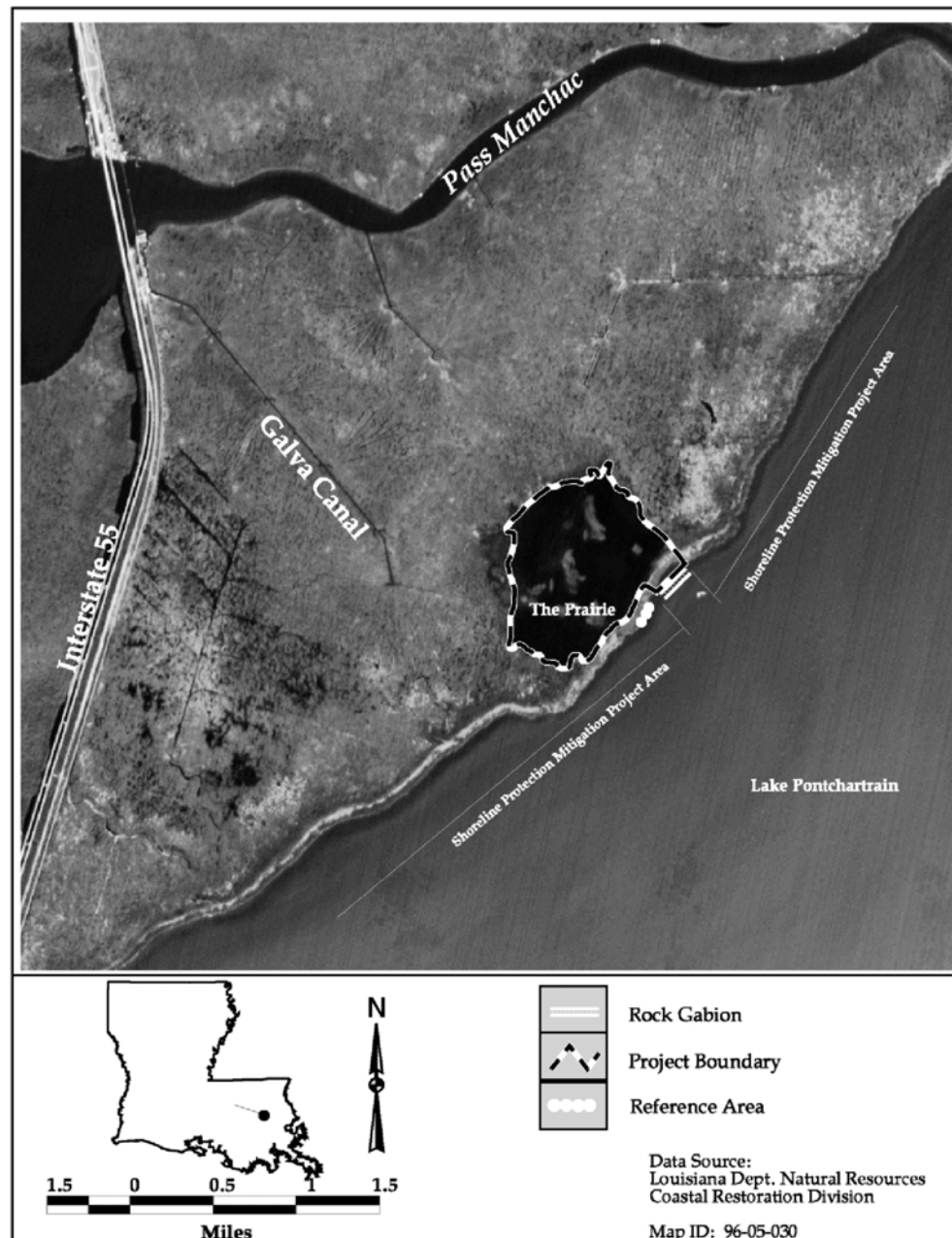
Turtle Cove

- State-Funded Project
- Construction Completed - July, 1994
- Location: Western Shore of Lake Pontchartrain



PO-10 -- Turtle Cove Project Location

- **Project Features**
 - Narrow Eroding Shoreline
 - Fresh Shallow Open Water
 - 1640 ft Rock Gabion



Planning

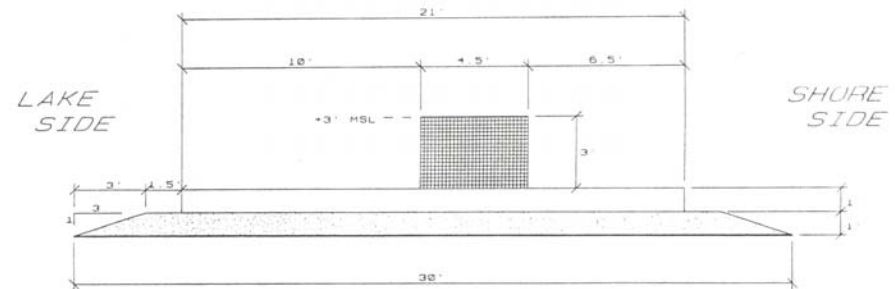
- Assumed Cause of Loss:
 - 13 ft (4 m) per year
 - Wind Generated Waves
 - Highly Organic Soils
 - Severe Storms

Goals and Objectives

- **Protect the Prairie and Surrounding Freshwater Community**
- **Diminish Shoreline Erosion**

Construction

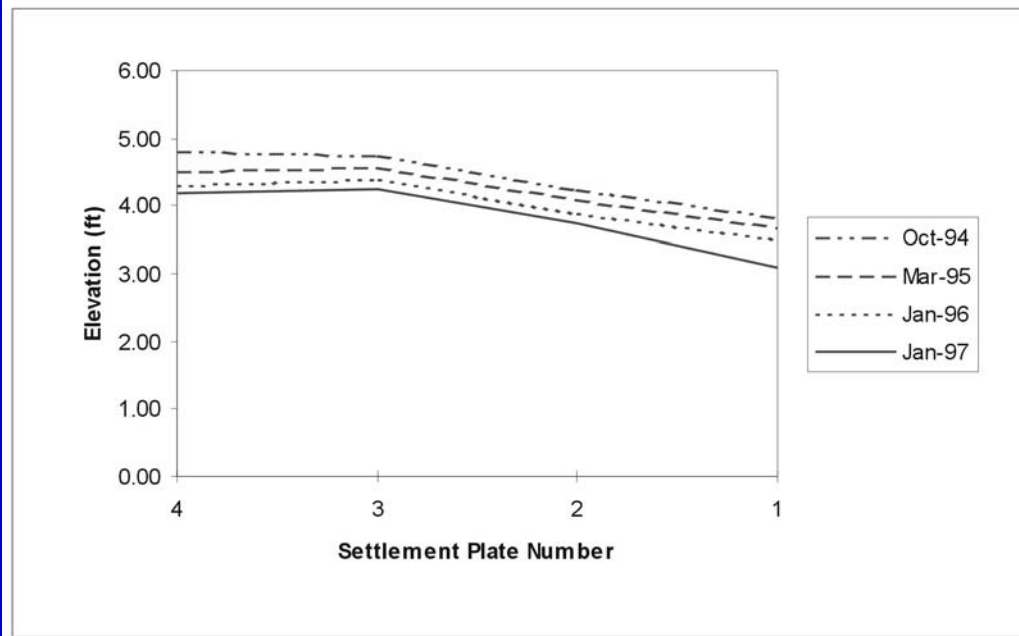
- Final Features
 - 1640 ft of Rock Filled Gabions
 - 30 ft wide Base Layer
 - Crushed Limestone over Geotextile Fabric
 - 10 – 12 inches thick
 - 3 ft tall Gabion Baskets
 - 2.5 ft MHW



Monitoring Variables

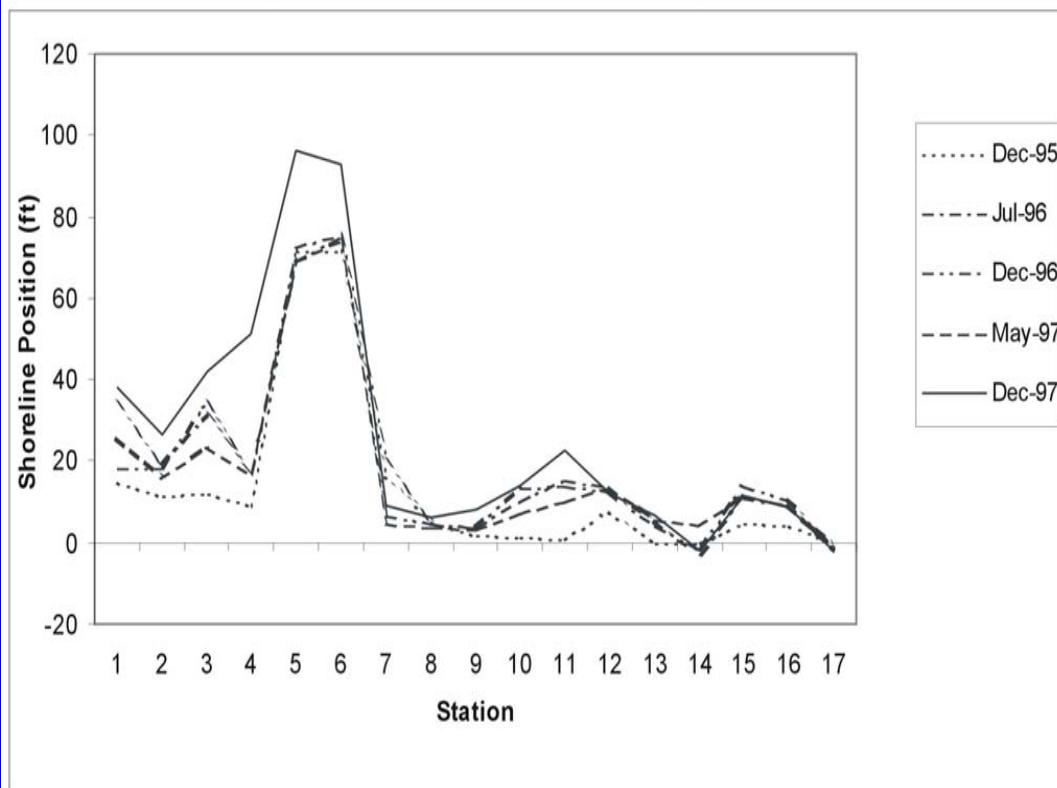
- Physical Stabilization Goal
 - Structure Elevation
 - Shoreline Position

Physical Response



- Gabion Settlement
- Average Settlement
Oct 1994 – Jan 1997
 $-0.59 \text{ ft} \pm 0.06$

Physical Response



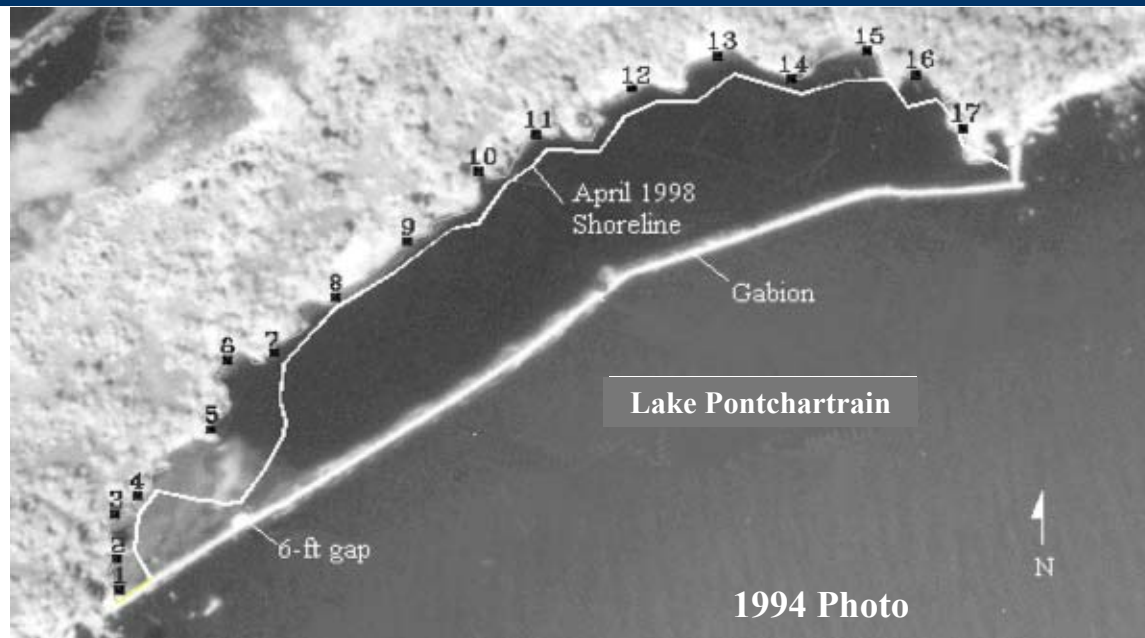
Shoreline Progradation
Oct 1994 – Dec 1997
3.75 ft/yr

Sediment Accretion
Jan 1996 – Jan 1997
Average depth
-1.43ft \pm 0.10
to
-1.17ft \pm 0.13

Biological Response

- No Biological Targets
- No Biological Monitoring

Landscape Response



- **Stable Shoreline**
- **Sediment Accumulation – Emergent Vegetation**

Project Adaptive Management

- Implemented Changes
 - Original Plan – 1990
 - Sand-filled Longard Tubes
 - Soil Borings – 1992
 - Poor Soil Bearing Capabilities
 - Final Decision – November 1992
 - Gabion Structure -- ~300 ft from Shore
- Rock Capping – 2000
 - 1 ft added

Project Adaptive Management

- Recommended Improvements
 - NONE
 - A **stable, prograding shoreline** has been established.

Lessons Learned for Future Projects

- **Planning Process**
 - Thoughtful, Deliberate Analysis
- **Benchmarks**
 - Verify/Set Prior to Construction
- **Construction Methodology**
 - Works Well in Organic Soils